

STATE OF CALIFORNIA  
STATE AND CONSUMER SERVICES AGENCY  
CALIFORNIA BUILDING STANDARDS COMMISSION  
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Office Use Item No. \_\_\_\_\_

**PARTICIPATION COMMENTS FOR THE NOTICE DATED AUGUST 29, 2006**  
Written comments are to be sent to the above address.

**WRITTEN COMMENT DEADLINE: OCTOBER 23, 2006**

Date: Oct 10<sup>th</sup> 2006

From:

Michael Cudahy

Name (Print or type)



(Signature)

**Plastic Pipe and Fittings Association (PPFA)**

Agency, jurisdiction, chapter, company, association, individual, etc.

**800 Roosevelt Road, Bldg C, Ste 312, Glen Ellyn,**

Street

**IL**

State

**60137**

Zip

We (do not)agree with:

☒ [ X ] The Agency proposed modifications As Submitted on Section No. **OSHPD 604 Exceptions 1,3,4**

and request that this section or reference provision be recommended:

☐ [ ] Approved ☒ [ X ] Disapproved ☐ [ ] Held for Further Study ☐ [ ] Approved as Amended

by the reviewing Code Advisory Committee.

**Suggested Revisions to the Text of the Regulations:**

Plastic Pipe and Fittings Association (PPFA) opposes the exceptions for PEX, PEX-AL-PEX and CPVC plumbing systems. We believe that full adoption of the model plumbing code is the proper course of action so a level playing field exists for all materials and participants in the building industry. Any unwarranted, politically motivated, or special interest restriction in the Code negatively impacts the public, interstate commerce and builders by limiting choices of materials and likely increases project cost. Plastic piping materials are safe, proven and energy and water saving materials that simply out perform alternatives at lower installed costs and there is no reason to limit their application.

The full statewide adoption of hot and cold water distribution plastic piping systems would provide ***environmental benefits to California*** such as less copper discharge, energy and water savings over legacy systems such as copper tube, all at a lower installed cost for consumers.

California agencies and groups concerned with copper accumulating in bodies of water and harming the ecosystem, such as *Bay Area Clean Water Agencies* and *Bay Area Pollution Prevention Group*, have suggested using non-copper pipe where permitted.<sup>1</sup> The Palo Alto Regional Water Quality Control Plant has estimated that approximately 71% of

the copper discharged from the RWQCP into the San Francisco Bay comes from corrosion of copper pipes and cooling equipment in homes and businesses. As early as 1997, they indicated a possible corrective action would be to ban the use of copper pipe in new buildings.<sup>2</sup>

Numerous energy and water savings studies of plastic and copper piping such as “**Evaluation of Residential Hot Water Distribution Systems by Numeric Simulation**” produced for the California Energy Commission by Oak Ridge Labs, indicated adoption would be beneficial for California in terms of energy and water savings.

Recommendations for policymakers in the report included: (pg 5)

- *"Remove barriers to the use of CPVC and PEX piping when appropriate quality and durability can be demonstrated."*

For New Homes: (pg 92)

- *Consider CPVC or PEX plastic piping in lieu of copper regardless of system type (conventional, recirculation, or parallel pipe) when appropriate quality and durability can be demonstrated for the products in question. This change will reduce the initial cost of the system as well as reduce energy and water waste.*

Recommendations for homeowners included: (pg 93)

- *"Request CPVC or PEX plastic piping in lieu of copper whenever appropriate quality and durability can be demonstrated for the products in question. These will have lower initial costs and somewhat lower utility costs."*
- *"Replace defective existing systems with CPVC or PEX plastic piping in lieu of copper whenever appropriate quality and durability can be demonstrated for the products in question. These will have lower initial costs and somewhat lower utility costs. "*

Plumbing layouts primarily utilized with PEX and PEX-AL-PEX systems, known as manifold, parallel, or “home-run” systems, are even recognized in green building rating systems such as LEED for Homes. Studies<sup>4,5</sup> by NAHB RC show benefits such as less wait time for hot water, less water, and less energy waste for PEX systems when compared to legacy metallic trunk and branch layouts. One energy analysis indicated that a PEX parallel piping system combined with either a tank or demand heater results in energy savings of between 6% and 13% over a copper trunk and branch system.

While plastic piping materials are already recognized in a significant number of California jurisdictions, PPFA believes that full adoption of PEX and PEX-AL-PEX is the proper course of action providing consumers the benefit of a choice of plumbing materials. Any unwarranted, politically motivated, or special interest restriction in the California State Code negatively impacts the public, interstate commerce and builders by limiting choices of materials and likely also increases project cost. Plastic piping materials are safe, proven and energy and water saving materials that simply out perform alternatives at lower installed costs, and there is no reason to limit their state-wide application.

Many believe, erroneously, that the Federal (and state) Safe Drinking Water Act (SDWA) assures citizens of safe drinking water at the tap. Except for the leaching of lead from interior plumbing, however, products installed in a building that convey drinking water are not subject to the SDWA. A national, consensus American National Standard developed by NSF International creates the bridge between the SDWA and the quality of the water delivered to the consumer's tap. This ANSI standard is NSF Standard 61: Drinking Water System Components – Health Effects

Californians, unlike citizens in most of the rest of the 49 states, have not enjoyed the health effects protection provided by NSF Standard 61: Drinking Water System Components – Health Effects, because the state is nearly ten years behind in adopting a modern plumbing code. The current version of the Uniform Plumbing Code of IAPMO, the code used as the basis of the California Plumbing Code, requires that all plumbing products conveying drinking water meet the requirements of NSF Standard 61. That provision is not in effect in California even though NSF Standard 61 has been available for use since the early 1990's.

NSF Standard 61 establishes the health effects requirements for the chemical contaminants and impurities that are indirectly imparted to drinking water from products, components and materials used in drinking water systems. The standard is maintained by a Joint Committee with equal representation from regulators (such as EPA, Health Canada,

and state drinking water officials), users (such as water purveyors, utilities, and engineers) and manufacturers. The NSF/ANSI Standard 61 is accredited by the American National Standards Institute, which ensures the standard is developed and maintained using an open, consensus process and has representation by all stakeholders.

It should be noted that both PEX and CPVC are tested to a more stringent standard than is copper, under NSF Standard 61, because copper pipe cannot meet leaching tests conducted at some of the lower pH drinking water chemistry found in California and elsewhere across the nation.

While the costs for materials and labor can vary over time, plastic piping systems are far more cost effective than alternatives. A 2006 report for the APC in NY, "Cost Analysis of High-Rise Plumbing Piping System"<sup>6</sup> concludes, "The lowest installed cost for the plumbing piping systems in a 12-story residential tower of a high-rise building would be plastic piping. Plastic piping, using PVC (or ABS), CPVC, and PEX cost significantly less to install than metallic piping using cast iron soil pipe and copper tubing. The material cost savings for the installation is 74 percent when using plastic pipe. The labor savings is 38 percent."

1. Preventing Corrosion Protects San Francisco Bay, 05/2003, RWQCP-2500c
2. Copper Piping Corrosion: A Problem for San Francisco Bay, February 1997, RWQCP
3. Evaluation of Residential Hot Water Distribution Systems by Numeric Simulation, March 2004, Buildings Technology Center Oak Ridge National Laboratory, Robert Wendt, et al.
4. Evaluation of Residential Water Distribution Piping Installation, September 2006, NAHB RC PATH report
5. Performance Comparison of Residential Hot Water Systems, November 2002, *Prepared for:* National Renewable Energy Laboratory by NAHB Research Center, Inc., Joe Wiehagen and Jeannie Legget Sikora.
6. Cost Analysis of High-Rise Plumbing Piping System, July 2006, Julius Ballanco, P.E.

**Reason:** [The reason should be concise if the request is for "Disapproval," "Further Study," or "Approve As Amend" and identify at least one of the 9-point criteria (following) of Health and Safety Code §18930.]

## HEALTH & SAFETY CODE SECTION 18930

### SECTION 18930. APPROVAL OR ADOPTION OF BUILDING STANDARDS; ANALYSIS AND CRITERIA; REVIEW CONSIDERATIONS; FACTUAL DETERMINATIONS

- (a) Any building standard adopted or proposed by state agencies shall be submitted to, and approved or adopted by, the California Building Standards Commission prior to codification. Prior to submission to the commission, building standards shall be adopted in compliance with the procedures specified in Article 5 (commencing with Section 11346) of Chapter 3.5 of Part 1 of Division 3 of Title 2 of the Government Code. Building standards adopted by state agencies and submitted to the commission for approval shall be accompanied by an analysis written by the adopting agency or state agency that proposes the building standards which shall, to the satisfaction of the commission, justify the approval thereof in terms of the following criteria:
- (1) The proposed building standards do not conflict with, overlap, or duplicate other building standards.
  - (2) The proposed building standard is within the parameters established by enabling legislation and is not expressly within the exclusive jurisdiction of another agency.
  - (3) The public interest requires the adoption of the building standards.
  - (4) The proposed building standard is not unreasonable, arbitrary, unfair, or capricious, in whole or in part.
  - (5) The cost to the public is reasonable, based on the overall benefit to be derived from the building standards.
  - (6) The proposed building standard is not unnecessarily ambiguous or vague, in whole or in part.
  - (7) The applicable national specifications, published standards, and model codes have been incorporated therein as provided in this part, where appropriate.
    - (A) If a national specification, published standard, or model code does not adequately address the goals of the state agency, a statement defining the inadequacy shall accompany the proposed building standard when submitted to the commission.
    - (B) If there is no national specification, published standard, or model code that is relevant to the proposed building standard, the state agency shall prepare a statement informing the commission and submit that statement with the proposed building standard.
  - (8) The format of the proposed building standards is consistent with that adopted by the commission.
  - (9) The proposed building standard, if it promotes fire and panic safety as determined by the State Fire Marshal, has the written approval of the State Fire Marshal.